

SEQUENCE LISTING

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20           25           30

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Gly Lys Ser Lys Val His Thr Arg Gln Gln Cys Arg Ser Arg Phe Val
35           40           45

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Lys Lys Asp Gly His Cys Asn Val Gln Phe Ile Asn Val Gly Glu Lys
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Gly Gln Arg Tyr Leu Ala Asp Ile Phe Thr Thr Cys Val Asp Ile Arg
65 70 75 80

Trp Arg Trp Met Leu Val Ile Phe Cys Leu Ala Phe Val Leu Ser Trp
85 90 95

Leu Phe Phe Gly Cys Val Phe Trp Leu Ile Ala Leu Leu His Gly Asp
100 105 110

Leu Asp Ala Ser Lys Glu Gly Lys Ala Cys Val Ser Glu Val Asn Ser
115 120 125

Phe Thr Ala Ala Phe Leu Phe Ser Ile Glu Thr Gln Thr Thr Ile Gly
130 135 140

Tyr Gly Phe Arg Cys Val Thr Asp Glu Cys Pro Ile Ala Val Phe Met
145 150 155 160

Val Val Phe Gln Ser Ile Val Gly Cys Ile Ile Asp Ala Phe Ile Ile
165 170 175

Gly Ala Val Met Ala Lys Met Ala Lys Pro Lys Lys Arg Asn Glu Thr
180 185 190

Leu Val Phe Ser His Asn Ala Val Ile Ala Met Arg Asp Gly Lys Leu
195 200 205

Cys Leu Met Trp Arg Val Gly Asn Leu Arg Lys Ser His Leu Val Glu
210 215 220

Ala His Val Arg Ala Gln Leu Leu Lys Ser Arg Ile Thr Ser Glu Gly
225 230 235 240

Glu Tyr Ile Pro Leu Asp Gln Ile Asp Ile Asn Val Gly Phe Asp Ser
245 250 255

Gly Ile Asp Arg Ile Phe Leu Val Ser Pro Ile Thr Ile Val His Glu
260 265 270

Ile Asp Glu Asp Ser Pro Leu Tyr Asp Leu Ser Lys Gln Asp Ile Asp
275 280 285

Asn Ala Asp Phe Glu Ile Val Val Ile Leu Glu Gly Met Val Glu Ala
290 295 300

Thr Ala Met Thr Thr Gln Cys Arg Ser Ser Tyr Leu Ala Asn Glu Ile
305 310 315 320

Leu Trp Gly His Arg Tyr Glu Pro Val Leu Phe Glu Glu Lys His Tyr
325 330 335
Tyr Lys Val Asp Tyr Ser Arg Phe His Lys Thr Tyr Glu Val Pro Asn
340 345 350

Thr Pro Leu Cys Ser Ala Arg Asp Leu Ala Glu Lys Lys Tyr Ile Leu
355 360 365

Ser Asn Ala Asn Ser Phe Cys Tyr Glu Asn Glu Val Ala Leu Thr Ser
370 375 380

Lys Glu Glu Asp Asp Ser Glu Asn Gly Val Pro Glu Ser Thr Ser Thr
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ccatcccctc ctcacctoga agccaac atg aag gag acc cgg ggc tac gga ggg 234
Met Lys Glu Thr Arg Gly Tyr Gly Gly
1 5
gat gcc ccc ttc tgc acc cgc ctc aac cac tcc tac aca ggc atg tgg 282
Asp Ala Pro Phe Cys Thr Arg Leu Asn His Ser Tyr Thr Gly Met Trp
10 15 20 25
gcg ccc gag cgt tcc gcc gag gcg cgg ggc aac ctc acg cgc cct cca 330
Ala Pro Glu Arg Ser Ala Glu Ala Arg Gly Asn Leu Thr Arg Pro Pro

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Gly	Ser	Gly	Glu	Asp	Cys	Gly	Ser	Val	Ser	Val	Ala	Phe	Pro	Ile	Thr				
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atg	ctg	ctc	act	ggg	ttc	gtg	ggc	aac	gca	ctg	gcc	atg	ctg	ctc	gtg	426			
Met	Leu	Leu	Thr	Gly	Phe	Val	Gly	Asn	Ala	Leu	Ala	Met	Leu	Leu	Val				
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Ser	Arg	Ser	Tyr	Arg	Arg	Arg	Glu	Ser	Lys	Arg	Lys	Lys	Ser	Phe	Leu				
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ctg	tgc	atc	ggc	tgg	ctg	gcg	ctc	acc	gac	ctg	gtc	ggg	cag	ctt	ctc	522			
Leu	Cys	Ile	Gly	Trp	Leu	Ala	Leu	Thr	Asp	Leu	Val	Gly	Gln	Leu	Leu				
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acc	acc	ccg	gtc	gtc	atc	gtc	gtg	tac	ctg	tcc	aag	cag	cgt	tgg	gag	570			
Thr	Thr	Pro	Val	Val	Ile	Val	Val	Tyr	Leu	Ser	Lys	Gln	Arg	Trp	Glu				
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cac	atc	gac	ccg	tcg	ggg	cgg	ctc	tgc	acc	ttt	ttc	ggg	ctg	acc	atg	618			
His	Ile	Asp	Pro	Ser	Gly	Arg	Leu	Cys	Thr	Phe	Phe	Gly	Leu	Thr	Met				
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Thr	Val	Phe	Gly	Leu	Ser	Ser	Leu	Phe	Ile	Ala	Ser	Ala	Met	Ala	Val				
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Glu	Arg	Ala	Leu	Ala	Ile	Arg	Ala	Pro	His	Trp	Tyr	Ala	Ser	His	Met				
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Lys	Thr	Arg	Ala	Thr	Arg	Ala	Val	Leu	Leu	Gly	Val	Trp	Leu	Ala	Val				
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cag	tgg	ccc	ggg	acg	tgg	tgc	ttc	atc	agc	acc	ggg	cga	ggg	ggc	aac	858			
Gln	Trp	Pro	Gly	Thr	Trp	Cys	Phe	Ile	Ser	Thr	Gly	Arg	Gly	Gly	Asn				
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Phe	Ala	Phe	Leu	Gly	Leu	Leu	Ala	Leu	Thr	Val	Thr	Phe	Ser	Cys	Asn				
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Ile Gln Leu Met Gly Ile Met Cys Val Leu Ser Val Cys Trp Ser Pro	
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ctc ctg ata atg atg ttg aaa atg atc ttc aat cag aca tca gtt gag	1146
Leu Leu Ile Met Met Leu Lys Met Ile Phe Asn Gln Thr Ser Val Glu	
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His Cys Lys Thr His Thr Glu Lys Gln Lys Glu Cys Asn Phe Phe Leu	
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ata gct gtt cgc ctg gct tca ctg aac cag atc ttg gat cct tgg gtt	1242
Ile Ala Val Arg Leu Ala Ser Leu Asn Gln Ile Leu Asp Pro Trp Val	
330 335 340 345	
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Tyr Leu Leu Leu Arg Lys Ile Leu Leu Arg Lys Phe Cys Gln Ile Arg	
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Tyr His Thr Asn Asn Tyr Ala Ser Ser Ser Thr Ser Leu Pro Cys Gln	
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Cys Ser Ser Thr Leu Met Trp Ser Asp His Leu Glu Arg	
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ctaa

2344

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Ala Arg Gly Asn Leu Thr Arg Pro Pro Gly Ser Gly Glu Asp Cys Gly
35 40 45

Ser Val Ser Val Ala Phe Pro Ile Thr Met Leu Leu Thr Gly Phe Val
50 55 60

Gly Asn Ala Leu Ala Met Leu Leu Val Ser Arg Ser Tyr Arg Arg Arg
65 70 75 80

Glu Ser Lys Arg Lys Lys Ser Phe Leu Leu Cys Ile Gly Trp Leu Ala
85 90 95

Leu Thr Asp Leu Val Gly Gln Leu Leu Thr Thr Pro Val Val Ile Val
100 105 110

Val Tyr Leu Ser Lys Gln Arg Trp Glu His Ile Asp Pro Ser Gly Arg
115 120 125

Leu Cys Thr Phe Phe Gly Leu Thr Met Thr Val Phe Gly Leu Ser Ser
130 135 140

Leu Phe Ile Ala Ser Ala Met Ala Val Glu Arg Ala Leu Ala Ile Arg
145 150 155 160

Ala Pro His Trp Tyr Ala Ser His Met Lys Thr Arg Ala Thr Arg Ala
165 170 175

Val Leu Leu Gly Val Trp Leu Ala Val Leu Ala Phe Ala Leu Leu Pro
180 185 190

Val Leu Gly Val Gly Gln Tyr Thr Val Gln Trp Pro Gly Thr Trp Cys
195 200 205

Phe Ile Ser Thr Gly Arg Gly Gly Asn Gly Thr Ser Ser Ser His Asn
210 215 220

Trp Gly Asn Leu Phe Phe Ala Ser Ala Phe Ala Phe Leu Gly Leu Leu
225 230 235 240

Ala Leu Thr Val Thr Phe Ser Cys Asn Leu Ala Thr Ile Lys Ala Leu
245 250 255

Val Ser Arg Cys Arg Ala Lys Ala Thr Ala Ser Gln Ser Ser Ala Gln
260 265 270

Trp Gly Arg Ile Thr Thr Glu Thr Ala Ile Gln Leu Met Gly Ile Met
275 280 285

Cys Val Leu Ser Val Cys Trp Ser Pro Leu Leu Ile Met Met Leu Lys
290 295 300

Met Ile Phe Asn Gln Thr Ser Val Glu His Cys Lys Thr His Thr Glu
305 310 315 320

Lys Gln Lys Glu Cys Asn Phe Phe Leu Ile Ala Val Arg Leu Ala Ser
325 330 335

Leu Asn Gln Ile Leu Asp Pro Trp Val Tyr Leu Leu Leu Arg Lys Ile
340 345 350

Leu Leu Arg Lys Phe Cys Gln Ile Arg Tyr His Thr Asn Asn Tyr Ala
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Ser Asp His Leu Glu Arg
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Leu	Leu	Phe	Trp	Gly	Cys	Cys	Val	Met	His	Ser	Trp	Glu	Gly	His	Ile		
		10						15					20				
aga	ccc	aca	cgg	aaa	cca	aac	aca	aag	ggt	aat	aac	tgt	aga	gac	agt		152
Arg	Pro	Thr	Arg	Lys	Pro	Asn	Thr	Lys	Gly	Asn	Asn	Cys	Arg	Asp	Ser		
		25					30					35					
acc	ttg	tgc	cca	gct	tat	gcc	acc	tgc	acc	aat	aca	gtg	gac	agt	tac		200
Thr	Leu	Cys	Pro	Ala	Tyr	Ala	Thr	Cys	Thr	Asn	Thr	Val	Asp	Ser	Tyr		
	40					45					50						
tat	tgc	gct	tgc	aaa	caa	ggc	ttc	ctg	tcc	agc	aat	ggg	caa	aat	cac		248
Tyr	Cys	Ala	Cys	Lys	Gln	Gly	Phe	Leu	Ser	Ser	Asn	Gly	Gln	Asn	His		
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ttc	aag	gat	cca	gga	gtg	cga	tgc	aaa	gat	att	gat	gaa	tgt	tct	caa		296
Phe	Lys	Asp	Pro	Gly	Val	Arg	Cys	Lys	Asp	Ile	Asp	Glu	Cys	Ser	Gln		
			75					80						85			
agc	ccc	cag	ccc	tgt	ggt	cct	aac	tca	tcc	tgc	aaa	aac	ctg	tca	ggg		344
Ser	Pro	Gln	Pro	Cys	Gly	Pro	Asn	Ser	Ser	Cys	Lys	Asn	Leu	Ser	Gly		
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agg	tac	aag	tgc	agc	tgt	tta	gat	ggt	ttc	tct	tct	ccc	act	gga	aat		392
Arg	Tyr	Lys	Cys	Ser	Cys	Leu	Asp	Gly	Phe	Ser	Ser	Pro	Thr	Gly	Asn		
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gac	tgg	gtc	cca	gga	aag	ccg	ggc	aat	ttc	tcc	tgt	act	gat	atc	aat		440
Asp	Trp	Val	Pro	Gly	Lys	Pro	Gly	Asn	Phe	Ser	Cys	Thr	Asp	Ile	Asn		
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Glu	Cys	Leu	Thr	Ser	Ser	Val	Cys	Pro	Glu	His	Ser	Asp	Cys	Val	Asn		
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Ser	Met	Gly	Ser	Tyr	Ser	Cys	Ser	Cys	Gln	Val	Gly	Phe	Ile	Ser	Arg		
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Asn	Ser	Thr	Cys	Glu	Asp	Val	Asp	Glu	Cys	Ala	Asp	Pro	Arg	Ala	Cys		
		170					175					180					
cca	gag	cat	gca	act	tgt	aat	aac	act	gtt	gga	aac	tac	tct	tgt	ttc		632
Pro	Glu	His	Ala	Thr	Cys	Asn	Asn	Thr	Val	Gly	Asn	Tyr	Ser	Cys	Phe		
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tgc	aac	cca	gga	ttt	gaa	tcc	agc	agt	ggc	cac	ttg	agt	ttc	cag	ggt		680
Cys	Asn	Pro	Gly	Phe	Glu	Ser	Ser	Ser	Gly	His	Leu	Ser	Phe	Gln	Gly		
	200					205					210						
ctc	aaa	gca	tcg	tgt	gaa	gat	att	gat	gaa	tgc	act	gaa	atg	tgc	ccc		728
Leu	Lys	Ala	Ser	Cys	Glu	Asp	Ile	Asp	Glu	Cys	Thr	Glu	Met	Cys	Pro		
215					220					225				230			
atc	aat	tca	aca	tgc	acc	aac	act	cct	ggg	agc	tac	ttt	tgc	acc	tgc		776
Ile	Asn	Ser	Thr	Cys	Thr	Asn	Thr	Pro	Gly	Ser	Tyr	Phe	Cys	Thr	Cys		

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gga	gtg	gaa	tgt	aga	gat	att	gat	gag	tgc	cgc	caa	gat	cca	tca	acc	872			
Gly	Val	Glu	Cys	Arg	Asp	Ile	Asp	Glu	Cys	Arg	Gln	Asp	Pro	Ser	Thr				
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Cys	Gly	Pro	Asn	Ser	Ile	Cys	Thr	Asn	Ala	Leu	Gly	Ser	Tyr	Ser	Cys				
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Ile	Pro	Asp	Asn	Lys	Gln	Ile	Gln	Gln	Cys	Gln	Glu	Gly	Thr	Ala	Val				
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Lys	Pro	Ala	Tyr	Val	Ser	Phe	Cys	Ala	Gln	Ile	Asn	Asn	Ile	Phe	Ser				
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Val	Leu	Asp	Lys	Val	Cys	Glu	Asn	Lys	Thr	Thr	Val	Val	Ser	Leu	Lys				
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aat	aca	act	gag	agc	ttt	gtc	cct	gtg	ctt	aaa	caa	ata	tcc	acg	tgg	1208			
Asn	Thr	Thr	Glu	Ser	Phe	Val	Pro	Val	Leu	Lys	Gln	Ile	Ser	Thr	Trp				
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Thr	Lys	Phe	Thr	Lys	Glu	Glu	Thr	Ser	Ser	Leu	Ala	Thr	Val	Phe	Leu				
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Glu	Ser	Val	Glu	Ser	Met	Thr	Leu	Ala	Ser	Phe	Trp	Lys	Pro	Ser	Ala				
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Asn	Ile	Thr	Pro	Ala	Val	Arg	Thr	Glu	Tyr	Leu	Asp	Ile	Glu	Ser	Lys				
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Val	Ile	Asn	Lys	Glu	Cys	Ser	Glu	Glu	Asn	Val	Thr	Leu	Asp	Leu	Val				
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gcc	aag	ggg	gat	aag	atg	aag	atc	ggg	tgt	tcc	aca	att	gag	gaa	tct	1448			
Ala	Lys	Gly	Asp	Lys	Met	Lys	Ile	Gly	Cys	Ser	Thr	Ile	Glu	Glu	Ser				
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Glu	Ser	Thr	Glu	Thr	Thr	Gly	Val	Ala	Phe	Val	Ser	Phe	Val	Gly	Met				
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acc acc tct gag atc aag ctg aag atg aat tct cga gtc gtt ggg ggc Thr Thr Ser Glu Ile Lys Leu Lys Met Asn Ser Arg Val Val Gly Gly 505 510 515	1592
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act ctg gag aac att cag cca aag cag aag ttt gag agg ccc atc tgt Thr Leu Glu Asn Ile Gln Pro Lys Gln Lys Phe Glu Arg Pro Ile Cys 535 540 545 550	1688
gtt tcc tgg agc act gat gtg aag ggt gga aga tgg aca tcc ttt ggc Val Ser Trp Ser Thr Asp Val Lys Gly Gly Arg Trp Thr Ser Phe Gly 555 560 565	1736
tgt gtg atc ctg gaa gct tct gag aca tat acc atc tgc agc tgt aat Cys Val Ile Leu Glu Ala Ser Glu Thr Tyr Thr Ile Cys Ser Cys Asn 570 575 580	1784
cag atg gca aat ctt gcc gtt atc atg gcg tct ggg gag ctc acg atg Gln Met Ala Asn Leu Ala Val Ile Met Ala Ser Gly Glu Leu Thr Met 585 590 595	1832
gac ttt tcc ttg tac atc att agc cat gta ggc att atc atc tcc ttg Asp Phe Ser Leu Tyr Ile Ile Ser His Val Gly Ile Ile Ile Ser Leu 600 605 610	1880
gtg tgc ctc gtc ttg gcc atc gcc acc ttt ctg ctg tgt cgc tcc atc Val Cys Leu Val Leu Ala Ile Ala Thr Phe Leu Leu Cys Arg Ser Ile 615 620 625 630	1928
cga aat cac aac acc tac ctc cac ctg cac ctc tgc gtg tgt ctc ctc Arg Asn His Asn Thr Tyr Leu His Leu His Leu Cys Val Cys Leu Leu 635 640 645	1976
ttg gcg aag act ctc ttc ctc gcc ggt ata cac aag act gac aac aag Leu Ala Lys Thr Leu Phe Leu Ala Gly Ile His Lys Thr Asp Asn Lys 650 655 660	2024
atg ggc tgc gcc atc atc gcg ggc ttc ctg cac tac ctt ttc ctt gcc Met Gly Cys Ala Ile Ile Ala Gly Phe Leu His Tyr Leu Phe Leu Ala 665 670 675	2072
tgc ttc ttc tgg atg ctg gtg gag gct gtg ata ctg ttc ttg atg gtc Cys Phe Phe Trp Met Leu Val Glu Ala Val Ile Leu Phe Leu Met Val 680 685 690	2120
aga aac ctg aag gtg gtg aat tac ttc agc tct cgc aac atc aag atg Arg Asn Leu Lys Val Val Asn Tyr Phe Ser Ser Arg Asn Ile Lys Met 695 700 705 710	2168
ctg cac atc tgt gcc ttt ggt tat ggg ctg ccg atg ctg gtg gtg gtg Leu His Ile Cys Ala Phe Gly Tyr Gly Leu Pro Met Leu Val Val Val 715 720 725	2216

atc tct gcc agt gtg cag cca cag ggc tat gga atg cat aat cgc tgc	2264
Ile Ser Ala Ser Val Gln Pro Gln Gly Tyr Gly Met His Asn Arg Cys	
730 735 740	
tgg ctg aat aca gag aca ggg ttc atc tgg agt ttc ttg ggg cca gtt	2312
Trp Leu Asn Thr Glu Thr Gly Phe Ile Trp Ser Phe Leu Gly Pro Val	
745 750 755	
tgc aca gtt ata gtg atc aac tcc ctt ctc ctg acc tgg acc ttg tgg	2360
Cys Thr Val Ile Val Ile Asn Ser Leu Leu Leu Thr Trp Thr Leu Trp	
760 765 770	
atc ctg agg cag agg ctt tcc agt gtt aat gcc gaa gtc tca acg cta	2408
Ile Leu Arg Gln Arg Leu Ser Ser Val Asn Ala Glu Val Ser Thr Leu	
775 780 785 790	
aaa gac acc agg tta ctg acc ttc aag gcc ttt gcc cag ctc ttc atc	2456
Lys Asp Thr Arg Leu Leu Thr Phe Lys Ala Phe Ala Gln Leu Phe Ile	
795 800 805	
ctg ggc tgc tcc tgg gtg ctg ggc att ttt cag att gga cct gtg gca	2504
Leu Gly Cys Ser Trp Val Leu Gly Ile Phe Gln Ile Gly Pro Val Ala	
810 815 820	
ggg gtc atg gct tac ctg ttc acc atc atc aac agc ctg cag ggg gcc	2552
Gly Val Met Ala Tyr Leu Phe Thr Ile Ile Asn Ser Leu Gln Gly Ala	
825 830 835	
ttc atc ttc ctc atc cac tgt ctg ctc aac ggc cag gta cga gaa gaa	2600
Phe Ile Phe Leu Ile His Cys Leu Leu Asn Gly Gln Val Arg Glu Glu	
840 845 850	
tac aag agg tgg atc act ggg aag acg aag ccc agc tcc cag tcc cag	2648
Tyr Lys Arg Trp Ile Thr Gly Lys Thr Lys Pro Ser Ser Gln Ser Gln	
855 860 865 870	
acc tca agg atc ttg ctg tcc tcc atg cca tcc gct tcc aag acg ggt	2696
Thr Ser Arg Ile Leu Leu Ser Ser Met Pro Ser Ala Ser Lys Thr Gly	
875 880 885	
taa agtcctttct tgctttcaaa tatgctatgg agccacagtt gaggacagta	2749
gtttcctgca ggagcctacc ctgaaatctc ttctcagctt aacatggaaa tgaggatccc	2809
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ggctaccatt ttgtttttctc ctgcccttgt tgggtgcatgg ttctaagcat gccctccag	3049
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gatttaccct aggaaaaaaaa aaaaaaaaaa aaaaaaaaaa a	3150

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 <213> Homo sapiens

<400> 9

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35 40 45

Asn Thr Val Asp Ser Tyr Tyr Cys Ala Cys Lys Gln Gly Phe Leu Ser
50 55 60

Ser Asn Gly Gln Asn His Phe Lys Asp Pro Gly Val Arg Cys Lys Asp
65 70 75 80

Ile Asp Glu Cys Ser Gln Ser Pro Gln Pro Cys Gly Pro Asn Ser Ser
85 90 95

Cys Lys Asn Leu Ser Gly Arg Tyr Lys Cys Ser Cys Leu Asp Gly Phe
100 105 110

Ser Ser Pro Thr Gly Asn Asp Trp Val Pro Gly Lys Pro Gly Asn Phe
115 120 125

Ser Cys Thr Asp Ile Asn Glu Cys Leu Thr Ser Ser Val Cys Pro Glu
130 135 140

His Ser Asp Cys Val Asn Ser Met Gly Ser Tyr Ser Cys Ser Cys Gln
145 150 155 160

Val Gly Phe Ile Ser Arg Asn Ser Thr Cys Glu Asp Val Asp Glu Cys
165 170 175

Ala Asp Pro Arg Ala Cys Pro Glu His Ala Thr Cys Asn Asn Thr Val
180 185 190

Gly Asn Tyr Ser Cys Phe Cys Asn Pro Gly Phe Glu Ser Ser Ser Gly
195 200 205

His Leu Ser Phe Gln Gly Leu Lys Ala Ser Cys Glu Asp Ile Asp Glu
210 215 220

Cys Thr Glu Met Cys Pro Ile Asn Ser Thr Cys Thr Asn Thr Pro Gly
225 230 235 240

Ser Tyr Phe Cys Thr Cys His Pro Gly Phe Ala Pro Ser Asn Gly Gln
245 250 255

Leu Asn Phe Thr Asp Gln Gly Val Glu Cys Arg Asp Ile Asp Glu Cys
260 265 270

Arg Gln Asp Pro Ser Thr Cys Gly Pro Asn Ser Ile Cys Thr Asn Ala
275 280 285

Leu Gly Ser Tyr Ser Cys Gly Cys Ile Ala Gly Phe His Pro Asn Pro
290 295 300

Glu Gly Ser Gln Lys Asp Gly Asn Phe Ser Cys Gln Arg Val Leu Phe
305 310 315 320

Lys Cys Lys Glu Asp Val Ile Pro Asp Asn Lys Gln Ile Gln Gln Cys
325 330 335

Gln Glu Gly Thr Ala Val Lys Pro Ala Tyr Val Ser Phe Cys Ala Gln
340 345 350

Ile Asn Asn Ile Phe Ser Val Leu Asp Lys Val Cys Glu Asn Lys Thr
355 360 365

Thr Val Val Ser Leu Lys Asn Thr Thr Glu Ser Phe Val Pro Val Leu
370 375 380

Lys Gln Ile Ser Thr Trp Thr Lys Phe Thr Lys Glu Glu Thr Ser Ser
385 390 395 400

Leu Ala Thr Val Phe Leu Glu Ser Val Glu Ser Met Thr Leu Ala Ser
405 410 415

Phe Trp Lys Pro Ser Ala Asn Ile Thr Pro Ala Val Arg Thr Glu Tyr
420 425 430

Leu Asp Ile Glu Ser Lys Val Ile Asn Lys Glu Cys Ser Glu Glu Asn
435 440 445

Val Thr Leu Asp Leu Val Ala Lys Gly Asp Lys Met Lys Ile Gly Cys
450 455 460

Ser Thr Ile Glu Glu Ser Glu Ser Thr Glu Thr Thr Gly Val Ala Phe
465 470 475 480

Val	Ser	Phe	Val	Gly	Met	Glu	Ser	Val	Leu	Asn	Glu	Arg	Phe	Phe	Lys	
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Asp	His	Gln	Ala	Pro	Leu	Thr	Thr	Ser	Glu	Ile	Lys	Leu	Lys	Met	Asn	
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Ser	Arg	Val	Val	Gly	Gly	Ile	Met	Thr	Gly	Glu	Lys	Lys	Asp	Gly	Phe	
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Ser	Asp	Pro	Ile	Ile	Tyr	Thr	Leu	Glu	Asn	Ile	Gln	Pro	Lys	Gln	Lys	
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Phe	Glu	Arg	Pro	Ile	Cys	Val	Ser	Trp	Ser	Thr	Asp	Val	Lys	Gly	Gly	
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Arg	Trp	Thr	Ser	Phe	Gly	Cys	Val	Ile	Leu	Glu	Ala	Ser	Glu	Thr	Tyr	
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Thr	Ile	Cys	Ser	Cys	Asn	Gln	Met	Ala	Asn	Leu	Ala	Val	Ile	Met	Ala	
			580					585						590		
Ser	Gly	Glu	Leu	Thr	Met	Asp	Phe	Ser	Leu	Tyr	Ile	Ile	Ser	His	Val	
		595					600						605			
Gly	Ile	Ile	Ile	Ser	Leu	Val	Cys	Leu	Val	Leu	Ala	Ile	Ala	Thr	Phe	
	610					615					620					
Leu	Leu	Cys	Arg	Ser	Ile	Arg	Asn	His	Asn	Thr	Tyr	Leu	His	Leu	His	
625					630					635					640	
Leu	Cys	Val	Cys	Leu	Leu	Leu	Ala	Lys	Thr	Leu	Phe	Leu	Ala	Gly	Ile	
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His	Lys	Thr	Asp	Asn	Lys	Met	Gly	Cys	Ala	Ile	Ile	Ala	Gly	Phe	Leu	
			660					665					670			
His	Tyr	Leu	Phe	Leu	Ala	Cys	Phe	Phe	Trp	Met	Leu	Val	Glu	Ala	Val	
		675					680					685				
Ile	Leu	Phe	Leu	Met	Val	Arg	Asn	Leu	Lys	Val	Val	Asn	Tyr	Phe	Ser	
	690					695					700					
Ser	Arg	Asn	Ile	Lys	Met	Leu	His	Ile	Cys	Ala	Phe	Gly	Tyr	Gly	Leu	
705					710					715					720	

Pro Met Leu Val Val Val Ile Ser Ala Ser Val Gln Pro Gln Gly Tyr
725 730 735

Gly Met His Asn Arg Cys Trp Leu Asn Thr Glu Thr Gly Phe Ile Trp
740 745 750

Ser Phe Leu Gly Pro Val Cys Thr Val Ile Val Ile Asn Ser Leu Leu
755 760 765

Leu Thr Trp Thr Leu Trp Ile Leu Arg Gln Arg Leu Ser Ser Val Asn
770 775 780

Ala Glu Val Ser Thr Leu Lys Asp Thr Arg Leu Leu Thr Phe Lys Ala
785 790 795 800

Phe Ala Gln Leu Phe Ile Leu Gly Cys Ser Trp Val Leu Gly Ile Phe
805 810 815

Gln Ile Gly Pro Val Ala Gly Val Met Ala Tyr Leu Phe Thr Ile Ile
820 825 830

Asn Ser Leu Gln Gly Ala Phe Ile Phe Leu Ile His Cys Leu Leu Asn
835 840 845

Gly Gln Val Arg Glu Glu Tyr Lys Arg Trp Ile Thr Gly Lys Thr Lys
850 855 860

Pro Ser Ser Gln Ser Gln Thr Ser Arg Ile Leu Leu Ser Ser Met Pro
865 870 875 880

Ser Ala Ser Lys Thr Gly
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<222> (213)..(1229)

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aaacgctcac tgggcaaaac accttcactg aaaagagacc tcatattatg caaaaaaat 180

cttaaaaaggc ctctgccttc agaagttaca ag													atg Met 1	atc Ile	aat Asn	tca Ser	acc Thr 5	tcc Ser	aca Thr	233
cag Gln	cct Pro	cca Pro 10	gat Asp	gaa Glu	tcc Ser	tgc Cys 15	tct Ser	cag Gln	aac Asn	ctc Leu	ctg Leu 20	atc Ile	act Thr	cag Gln	cag Gln	281				
atc Ile 25	att Ile	cct Pro	gtg Val	ctg Leu	tac Tyr	tgt Cys 30	atg Met	gtc Val	ttc Phe	att Ile	gca Ala 35	gga Gly	atc Ile	cta Leu	ctc Leu	329				
aat Asn 40	gga Gly	gtg Val	tca Ser	gga Gly	tgg Trp 45	ata Ile	ttc Phe	ttt Phe	tac Tyr	gtg Val 50	ccc Pro	agc Ser	tct Ser	gag Glu	agt Ser 55	377				
ttc Phe	atc Ile	atc Ile	tat Tyr	ctc Leu 60	aag Lys	aac Asn	att Ile	gtt Val	att Ile 65	gct Ala	gac Asp	ttt Phe	gtg Val	atg Met 70	agc Ser	425				
ctg Leu	act Thr	ttt Phe 75	cct Pro	ttc Phe	aag Lys	atc Ile	ctt Leu 80	ggt Gly	gac Asp	tca Ser	ggc Gly	ctt Leu 85	ggt Gly	ccc Pro	tgg Trp	473				
cag Gln	ctg Leu	aac Asn 90	gtg Val	ttt Phe	gtg Val	tgc Cys	agg Arg 95	gtc Val	tct Ser	gcc Ala	gtg Val 100	ctc Leu	ttc Phe	tac Tyr	gtc Val	521				
aac Asn 105	atg Met	tac Tyr	gtc Val	agc Ser	att Ile	gtg Val 110	ttc Phe	ttt Phe	ggg Gly	ctc Leu	atc Ile 115	agc Ser	ttt Phe	gac Asp	aga Arg	569				
tat Tyr 120	tat Tyr	aaa Lys	att Ile	gta Val	aag Lys 125	cct Pro	ctt Leu	tgg Trp	act Thr	tct Ser 130	ttc Phe	atc Ile	cag Gln	tca Ser	gtg Val 135	617				
agt Ser	tac Tyr	agc Ser	aaa Lys	ctt Leu 140	ctg Leu	tca Ser	gtg Val	ata Ile	gta Val 145	tgg Trp	atg Met	ctc Leu	atg Met	ctc Leu 150	ctc Leu	665				
ctt Leu	gct Ala	gtt Val	cca Pro 155	aat Asn	att Ile	att Ile	ctc Leu	acc Thr 160	aac Asn	cag Gln	agt Ser	gtt Val 165	agg Arg	gag Glu	gtt Val	713				
aca Thr	caa Gln	ata Ile 170	aaa Lys	tgt Cys	ata Ile	gaa Glu	ctg Leu 175	aaa Lys	agt Ser	gaa Glu	ctg Leu 180	gga Gly	cgg Arg	aag Lys	tgg Trp	761				
cac His 185	aaa Lys	gca Ala	tca Ser	aac Asn	tac Tyr	atc Ile 190	ttc Phe	gtg Val	gcc Ala	atc Ile	ttc Phe 195	tgg Trp	att Ile	gtg Val	ttt Phe	809				
ctt Leu 200	ttg Leu	tta Leu	atc Ile	gtt Val	ttc Phe 205	tat Tyr	act Thr	gct Ala	atc Ile	aca Thr 210	aag Lys	aaa Lys	atc Ile	ttt Phe	aag Lys 215	857				
tcc Ser	cac His	ctt Leu	aag Lys	tca Ser 220	agt Ser	cgg Arg	aat Asn	tcc Ser	act Thr 225	tcg Ser	gtc Val	aaa Lys	aag Lys	aaa Lys 230	tct Ser	905				
agc	cgc	aac	ata	ttc	agc	atc	gtg	ttt	gtg	ttt	ttt	gtc	tgt	ttt	gta	953				

•

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tcaaattgttc tttcaaaaca tttttataag taatgtttgt atctatcttca tgctttactg 2379
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Phe Ile Ala Gly Ile Leu Leu Asn Gly Val Ser Gly Trp Ile Phe Phe
35 40 45

Tyr Val Pro Ser Ser Glu Ser Phe Ile Ile Tyr Leu Lys Asn Ile Val
50 55 60

Ile Ala Asp Phe Val Met Ser Leu Thr Phe Pro Phe Lys Ile Leu Gly
65 70 75 80

Asp Ser Gly Leu Gly Pro Trp Gln Leu Asn Val Phe Val Cys Arg Val
85 90 95

Ser Ala Val Leu Phe Tyr Val Asn Met Tyr Val Ser Ile Val Phe Phe
100 105 110

Gly Leu Ile Ser Phe Asp Arg Tyr Tyr Lys Ile Val Lys Pro Leu Trp
115 120 125

Thr Ser Phe Ile Gln Ser Val Ser Tyr Ser Lys Leu Leu Ser Val Ile
130 135 140

Val Trp Met Leu Met Leu Leu Leu Ala Val Pro Asn Ile Ile Leu Thr
145 150 155 160

Asn Gln Ser Val Arg Glu Val Thr Gln Ile Lys Cys Ile Glu Leu Lys
165 170 175

Ser Glu Leu Gly Arg Lys Trp His Lys Ala Ser Asn Tyr Ile Phe Val
180 185 190

Ala Ile Phe Trp Ile Val Phe Leu Leu Leu Ile Val Phe Tyr Thr Ala
195 200 205

Ile Thr Lys Lys Ile Phe Lys Ser His Leu Lys Ser Ser Arg Asn Ser
210 215 220

Thr Ser Val Lys Lys Lys Ser Ser Arg Asn Ile Phe Ser Ile Val Phe
225 230 235 240

Val Phe Phe Val Cys Phe Val Pro Tyr His Ile Ala Arg Ile Pro Tyr
245 250 255

Thr Lys Ser Gln Thr Glu Ala His Tyr Ser Cys Gln Ser Lys Glu Ile
260 265 270

Leu Arg Tyr Met Lys Glu Phe Thr Leu Leu Leu Ser Ala Ala Asn Val
275 280 285

Cys Leu Asp Pro Ile Ile Tyr Phe Phe Leu Cys Gln Pro Phe Arg Glu
290 295 300

Ile Leu Cys Lys Lys Leu His Ile Pro Leu Lys Ala Gln Asn Asp Leu
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Asp Ile Ser Arg Ile Lys Arg Gly Asn Thr Thr Leu Glu Ser Thr Asp
325 330 335

Thr Leu

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<222> (85)..(1233)

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Met Val Ile Met Gly Gln Cys Tyr Tyr
1 5

aac gag acc atc ggc ttc ttc tat aac aac agt ggc aaa gag ctc agc 159
Asn Glu Thr Ile Gly Phe Phe Tyr Asn Asn Ser Gly Lys Glu Leu Ser
10 15 20 25

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Ser	His	Trp	Arg	Pro	Lys	Asp	Val	Val	Val	Val	Ala	Leu	Gly	Leu	Thr	
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gtc	agc	gtg	ctg	gtg	ctg	ctg	acc	aat	ctg	ctg	gtc	ata	gca	gcc	atc	255
Val	Ser	Val	Leu	Val	Leu	Leu	Thr	Asn	Leu	Leu	Val	Ile	Ala	Ala	Ile	
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gcc	tcc	aac	cgc	cgc	ttc	cac	cag	ccc	atc	tac	tac	ctg	ctc	ggc	aat	303
Ala	Ser	Asn	Arg	Arg	Phe	His	Gln	Pro	Ile	Tyr	Tyr	Leu	Leu	Gly	Asn	
		60					65					70				
ctg	gcc	gcg	gct	gac	ctc	ttc	gcg	ggc	gtg	gcc	tac	ctc	ttc	ctc	atg	351
Leu	Ala	Ala	Ala	Asp	Leu	Phe	Ala	Gly	Val	Ala	Tyr	Leu	Phe	Leu	Met	
	75					80					85					
ttc	cac	act	ggt	ccc	cgc	aca	gcc	cga	ctt	tca	ctt	gag	ggc	tgg	ttc	399
Phe	His	Thr	Gly	Pro	Arg	Thr	Ala	Arg	Leu	Ser	Leu	Glu	Gly	Trp	Phe	
90					95					100					105	
ctg	cgg	cag	ggc	ttg	ctg	gac	aca	agc	ctc	act	gcg	tcg	gtg	gcc	aca	447
Leu	Arg	Gln	Gly	Leu	Leu	Asp	Thr	Ser	Leu	Thr	Ala	Ser	Val	Ala	Thr	
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ctg	ctg	gcc	atc	gcc	gtg	gag	cgg	cac	cgc	agt	gtg	atg	gcc	gtg	cag	495
Leu	Leu	Ala	Ile	Ala	Val	Glu	Arg	His	Arg	Ser	Val	Met	Ala	Val	Gln	
			125					130					135			
ctg	cac	agc	cgc	ctg	ccc	cgt	ggc	cgc	gtg	gtc	atg	ctc	att	gtg	ggc	543
Leu	His	Ser	Arg	Leu	Pro	Arg	Gly	Arg	Val	Val	Met	Leu	Ile	Val	Gly	
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gtg	tgg	gtg	gct	gcc	ctg	ggc	ctg	ggg	ctg	ctg	cct	gcc	cac	tcc	tgg	591
Val	Trp	Val	Ala	Ala	Leu	Gly	Leu	Gly	Leu	Leu	Pro	Ala	His	Ser	Trp	
	155					160					165					
cac	tgc	ctc	tgt	gcc	ctg	gac	cgc	tgc	tca	cgc	atg	gca	ccc	ctg	ctc	639
His	Cys	Leu	Cys	Ala	Leu	Asp	Arg	Cys	Ser	Arg	Met	Ala	Pro	Leu	Leu	
170					175				180						185	
agc	cgc	tcc	tat	ttg	gcc	gtc	tgg	gct	ctg	tcg	agc	ctg	ctt	gtc	ttc	687
Ser	Arg	Ser	Tyr	Leu	Ala	Val	Trp	Ala	Leu	Ser	Ser	Leu	Leu	Val	Phe	
				190					195					200		
ctg	ctc	atg	gtg	gct	gtg	tac	acc	cgc	att	ttc	ttc	tac	gtg	cgg	cgg	735
Leu	Leu	Met	Val	Ala	Val	Tyr	Thr	Arg	Ile	Phe	Phe	Tyr	Val	Arg	Arg	
			205					210					215			
cga	gtg	cag	cgc	atg	gca	gag	cat	gtc	agc	tgc	cac	ccc	cgc	tac	cga	783
Arg	Val	Gln	Arg	Met	Ala	Glu	His	Val	Ser	Cys	His	Pro	Arg	Tyr	Arg	
		220					225					230				
gag	acc	acg	ctc	agc	ctg	gtc	aag	act	gtt	gtc	atc	atc	ctg	ggg	gcg	831
Glu	Thr	Thr	Leu	Ser	Leu	Val	Lys	Thr	Val	Val	Ile	Ile	Leu	Gly	Ala	
	235					240					245					
ttc	gtg	gtc	tgc	tgg	aca	cca	ggc	cag	gtg	gta	ctg	ctc	ctg	gat	ggc	879
Phe	Val	Val	Cys	Trp	Thr	Pro	Gly	Gln	Val	Val	Leu	Leu	Leu	Asp	Gly	
250					255					260					265	

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Leu Gly Cys Glu Ser Cys Asn Val Leu Ala Val Glu Lys Tyr Phe Leu	
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ctg ttg gcc gag gcc aac tca ctg gtc aat gct gct gtg tac tct tgc	975
Leu Leu Ala Glu Ala Asn Ser Leu Val Asn Ala Ala Val Tyr Ser Cys	
285 290 295	
cga gat gct gag atg cgc cgc acc ttc cgc cgc ctt ctc tgc tgc gcg	1023
Arg Asp Ala Glu Met Arg Arg Thr Phe Arg Arg Leu Leu Cys Cys Ala	
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tgc ctc cgc cag tcc acc cgc gag tct gtc cac tat aca tcc tct gcc	1071
Cys Leu Arg Gln Ser Thr Arg Glu Ser Val His Tyr Thr Ser Ser Ala	
315 320 325	
cag gga ggt gcc agc act cgc atc atg ctt ccc gag aac ggc cac cca	1119
Gln Gly Gly Ala Ser Thr Arg Ile Met Leu Pro Glu Asn Gly His Pro	
330 335 340 345	
ctg atg act cca ccc ttt agc tac ctt gaa ctt cag cgg tac gcg gca	1167
Leu Met Thr Pro Pro Phe Ser Tyr Leu Glu Leu Gln Arg Tyr Ala Ala	
350 355 360	
agc aac aaa tcc aca gcc cct gat gac ttg tgg gtg ctc ctg gct caa	1215
Ser Asn Lys Ser Thr Ala Pro Asp Asp Leu Trp Val Leu Leu Ala Gln	
365 370 375	
ccc aac caa cag gac tga ctgactggca ggacaaggctc tggcatggca	1263
Pro Asn Gln Gln Asp	
380	
cagcaccact gccaggcctc cccaggcaca ccactctgcc caggggaatgg gggctttggg	1323
tcacttccca ctgcctgggg gagtcagatg ggggtgcagga atctggctct tcagccatct	1383
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gtttgtggct ccttgagcc tccagggact ggctgtccc caatagaatt gaagcagtc	1683
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Val	Val	Val	Val	Ala	Leu	Gly	Leu	Thr	Val	Ser	Val	Leu	Val	Leu	Leu	
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Thr	Asn	Leu	Leu	Val	Ile	Ala	Ala	Ile	Ala	Ser	Asn	Arg	Arg	Phe	His	
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Gln	Pro	Ile	Tyr	Tyr	Leu	Leu	Gly	Asn	Leu	Ala	Ala	Ala	Asp	Leu	Phe	
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Ala	Gly	Val	Ala	Tyr	Leu	Phe	Leu	Met	Phe	His	Thr	Gly	Pro	Arg	Thr	
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Ala	Arg	Leu	Ser	Leu	Glu	Gly	Trp	Phe	Leu	Arg	Gln	Gly	Leu	Leu	Asp	
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Thr	Ser	Leu	Thr	Ala	Ser	Val	Ala	Thr	Leu	Leu	Ala	Ile	Ala	Val	Glu	
		115					120					125				
Arg	His	Arg	Ser	Val	Met	Ala	Val	Gln	Leu	His	Ser	Arg	Leu	Pro	Arg	
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Gly	Arg	Val	Val	Met	Leu	Ile	Val	Gly	Val	Trp	Val	Ala	Ala	Leu	Gly	
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Leu	Gly	Leu	Leu	Pro	Ala	His	Ser	Trp	His	Cys	Leu	Cys	Ala	Leu	Asp	
				165					170					175		
Arg	Cys	Ser	Arg	Met	Ala	Pro	Leu	Leu	Ser	Arg	Ser	Tyr	Leu	Ala	Val	
			180					185					190			
Trp	Ala	Leu	Ser	Ser	Leu	Leu	Val	Phe	Leu	Leu	Met	Val	Ala	Val	Tyr	
		195					200					205				
Thr	Arg	Ile	Phe	Phe	Tyr	Val	Arg	Arg	Arg	Val	Gln	Arg	Met	Ala	Glu	
	210					215					220					
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Lys	Thr	Val	Val	Ile	Ile	Leu	Gly	Ala	Phe	Val	Val	Cys	Trp	Thr	Pro	
				245					250					255		
Gly	Gln	Val	Val	Leu	Leu	Leu	Asp	Gly	Leu	Gly	Cys	Glu	Ser	Cys	Asn	
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Val Leu Ala Val Glu Lys Tyr Phe Leu Leu Leu Ala Glu Ala Asn Ser
275 280 285

Leu Val Asn Ala Ala Val Tyr Ser Cys Arg Asp Ala Glu Met Arg Arg
290 295 300

Thr Phe Arg Arg Leu Leu Cys Cys Ala Cys Leu Arg Gln Ser Thr Arg
305 310 315 320

Glu Ser Val His Tyr Thr Ser Ser Ala Gln Gly Gly Ala Ser Thr Arg
325 330 335

Ile Met Leu Pro Glu Asn Gly His Pro Leu Met Thr Pro Pro Phe Ser
340 345 350

Tyr Leu Glu Leu Gln Arg Tyr Ala Ala Ser Asn Lys Ser Thr Ala Pro
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Asp Asp Leu Trp Val Leu Leu Ala Gln Pro Asn Gln Gln Asp
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<222> (1)..(993)

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atc ttc ctc act ggc ctc cct gcc aac ctc ctg gcc ctg cgg gcc ttt 96
Ile Phe Leu Thr Gly Leu Pro Ala Asn Leu Leu Ala Leu Arg Ala Phe
20 25 30
gtg ggg cgg atc cgc cag ccc cag cct gca cct gtg cac atc ctc ctg 144
Val Gly Arg Ile Arg Gln Pro Gln Pro Ala Pro Val His Ile Leu Leu
35 40 45
ctg agc ctg acg ctg gcc gac ctc ctc ctg ctg ctg ctg ctg ccc ttc 192
Leu Ser Leu Thr Leu Ala Asp Leu Leu Leu Leu Leu Leu Leu Pro Phe
50 55 60
aag atc atc gag gct gcg tgg aac ttc cgc tgg tac ctg ccc aag gtc 240
Lys Ile Ile Glu Ala Ala Ser Asn Phe Arg Trp Tyr Leu Pro Lys Val
65 70 75 80

gtc tgc gcc ctc acg agt ttt ggc ttc tac agc agc atc tac tgc agc	288
Val Cys Ala Leu Thr Ser Phe Gly Phe Tyr Ser Ser Ile Tyr Cys Ser	
85 90 95	
acg tgg ctc ctg gcg ggc atc agc atc gag cgc tac ctg gga gtg gct	336
Thr Trp Leu Leu Ala Gly Ile Ser Ile Glu Arg Tyr Leu Gly Val Ala	
100 105 110	
ttc ccc gtg cag tac aag ctc tcc cgc cgg cct ctg tat gga gtg att	384
Phe Pro Val Gln Tyr Lys Leu Ser Arg Arg Pro Leu Tyr Gly Val Ile	
115 120 125	
gca gct ctg gtg gcc tgg gtt atg tcc ttt ggt cac tgc acc atc gtg	432
Ala Ala Leu Val Ala Trp Val Met Ser Phe Gly His Cys Thr Ile Val	
130 135 140	
atc atc gtt caa tac ttg aac acg act gag cag gtc aga agt ggc aat	480
Ile Ile Val Gln Tyr Leu Asn Thr Thr Glu Gln Val Arg Ser Gly Asn	
145 150 155 160	
gaa att acc tgc tac gag aac ttc acc gat aac cag ttg gac gtg gtg	528
Glu Ile Thr Cys Tyr Glu Asn Phe Thr Asp Asn Gln Leu Asp Val Val	
165 170 175	
ctg ccc gtg cgg ctg gag ctg tgc ctg gtg ctc ttc ttc atc ccc atg	576
Leu Pro Val Arg Leu Glu Leu Cys Leu Val Leu Phe Phe Ile Pro Met	
180 185 190	
gca gtc acc atc ttc tgc tac tgg cgt ttt gtg tgg atc atg ctc tcc	624
Ala Val Thr Ile Phe Cys Tyr Trp Arg Phe Val Trp Ile Met Leu Ser	
195 200 205	
cag ccc ctt gtg ggg gcc cag agg cgg cgc cga gcc gtg ggg ctg gct	672
Gln Pro Leu Val Gly Ala Gln Arg Arg Arg Arg Ala Val Gly Leu Ala	
210 215 220	
gtg gtg acg ctg ctc aat ttc ctg gtg tgc ttc gga cct tac aac gtg	720
Val Val Thr Leu Leu Asn Phe Leu Val Cys Phe Gly Pro Tyr Asn Val	
225 230 235 240	
tcc cac ctg gtg ggg tat cac cag aga aaa agc ccc tgg tgg cgg tca	768
Ser His Leu Val Gly Tyr His Gln Arg Lys Ser Pro Trp Trp Arg Ser	
245 250 255	
ata gcc gtg gtg ttc agt tca ctc aac gcc agt ctg gac ccc ctg ctc	816
Ile Ala Val Val Phe Ser Ser Leu Asn Ala Ser Leu Asp Pro Leu Leu	
260 265 270	
ttc tat ttc tct tct tca gtg gtg cgc agg gca ttt ggg aga ggg ctg	864
Phe Tyr Phe Ser Ser Ser Val Val Arg Arg Ala Phe Gly Arg Gly Leu	
275 280 285	
cag gtg ctg cgg aat cag ggc tcc tcc ctg ttg gga cgc aga ggc aaa	912
Gln Val Leu Arg Asn Gln Gly Ser Ser Leu Leu Gly Arg Arg Gly Lys	
290 295 300	
gac aca gca gag ggg aca aat gag gac agg ggt gtg ggt caa gga gaa	960
Asp Thr Ala Glu Gly Thr Asn Glu Asp Arg Gly Val Gly Gln Gly Glu	
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Gly Met Pro Ser Ser Asp Phe Thr Thr Glu
325 330

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Ile Phe Leu Thr Gly Leu Pro Ala Asn Leu Leu Ala Leu Arg Ala Phe
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Val Gly Arg Ile Arg Gln Pro Gln Pro Ala Pro Val His Ile Leu Leu
35 40 45

Leu Ser Leu Thr Leu Ala Asp Leu Leu Leu Leu Leu Leu Pro Phe
50 55 60

Lys Ile Ile Glu Ala Ala Ser Asn Phe Arg Trp Tyr Leu Pro Lys Val
65 70 75 80

Val Cys Ala Leu Thr Ser Phe Gly Phe Tyr Ser Ser Ile Tyr Cys Ser
85 90 95

Thr Trp Leu Leu Ala Gly Ile Ser Ile Glu Arg Tyr Leu Gly Val Ala
100 105 110

Phe Pro Val Gln Tyr Lys Leu Ser Arg Arg Pro Leu Tyr Gly Val Ile
115 120 125

Ala Ala Leu Val Ala Trp Val Met Ser Phe Gly His Cys Thr Ile Val
130 135 140

Ile Ile Val Gln Tyr Leu Asn Thr Thr Glu Gln Val Arg Ser Gly Asn
145 150 155 160

Glu Ile Thr Cys Tyr Glu Asn Phe Thr Asp Asn Gln Leu Asp Val Val
165 170 175

Leu Pro Val Arg Leu Glu Leu Cys Leu Val Leu Phe Phe Ile Pro Met
180 185 190

Ala Val Thr Ile Phe Cys Tyr Trp Arg Phe Val Trp Ile Met Leu Ser
195 200 205

Gln Pro Leu Val Gly Ala Gln Arg Arg Arg Arg Ala Val Gly Leu Ala
210 215 220

Val Val Thr Leu Leu Asn Phe Leu Val Cys Phe Gly Pro Tyr Asn Val
225 230 235 240

Ser His Leu Val Gly Tyr His Gln Arg Lys Ser Pro Trp Trp Arg Ser
245 250 255

Ile Ala Val Val Phe Ser Ser Leu Asn Ala Ser Leu Asp Pro Leu Leu
260 265 270

Phe Tyr Phe Ser Ser Ser Val Val Arg Arg Ala Phe Gly Arg Gly Leu
275 280 285

Gln Val Leu Arg Asn Gln Gly Ser Ser Leu Leu Gly Arg Arg Gly Lys
290 295 300

Asp Thr Ala Glu Gly Thr Asn Glu Asp Arg Gly Val Gly Gln Gly Glu
305 310 315 320

Gly Met Pro Ser Ser Asp Phe Thr Thr Glu
325 330

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<222> (72)..(1085)

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Met Gly Asn Asp Ser Val Ser Tyr Glu Tyr Gly Asp Tyr
1 5 10

agc gac ctc tgc gac cgc cct gtg gac tgc ctg gat ggc gcc tgc ctg 158
Ser Asp Leu Ser Asp Arg Pro Val Asp Cys Leu Asp Gly Ala Cys Leu
15 20 25

gcc atc gac ccg ctg cgc gtg gcc ccg ctc cca ctg tat gcc gcc atc 206
Ala Ile Asp Pro Leu Arg Val Ala Pro Leu Pro Leu Tyr Ala Ala Ile
30 35 40 45

ttc ctg gtg ggg gtg ccg ggc aat gcc atg gtg gcc tgg gtg gct ggg 254
Phe Leu Val Gly Val Pro Gly Asn Ala Met Val Ala Trp Val Ala Gly

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Lys	Val	Ala	Arg	Arg	Arg	Val	Gly	Ala	Thr	Trp	Leu	Leu	His	Leu	Ala			
			65				70						75					
gtg	gcg	gat	ttg	ctg	tgc	tgt	ttg	tct	ctg	ccc	atc	ctg	gca	gtg	ccc	350		
Val	Ala	Asp	Leu	Leu	Cys	Cys	Leu	Ser	Leu	Pro	Ile	Leu	Ala	Val	Pro			
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att	gcc	cgt	gga	ggc	cac	tgg	ccg	tat	ggg	gca	gtg	ggc	tgt	cgg	gcg	398		
Ile	Ala	Arg	Gly	Gly	His	Trp	Pro	Tyr	Gly	Ala	Val	Gly	Cys	Arg	Ala			
			95				100						105					
ctg	ccc	tcc	atc	atc	ctg	ctg	acc	atg	tat	gcc	agc	gtc	ctg	ctc	ctg	446		
Leu	Pro	Ser	Ile	Ile	Leu	Leu	Thr	Met	Tyr	Ala	Ser	Val	Leu	Leu	Leu			
110			115						120			125						
gca	gct	ctc	agt	gcc	gac	ctc	tgc	ttc	ctg	gct	ctc	ggg	cct	gcc	tgg	494		
Ala	Ala	Leu	Ser	Ala	Asp	Leu	Cys	Phe	Leu	Ala	Leu	Gly	Pro	Ala	Trp			
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tgg	tct	acg	gtt	cag	cgg	gcg	tgc	ggg	gtg	cag	gtg	gcc	tgt	ggg	gca	542		
Trp	Ser	Thr	Val	Gln	Arg	Ala	Cys	Gly	Val	Gln	Val	Ala	Cys	Gly	Ala			
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gcc	tgg	aca	ctg	gcc	ttg	ctg	ctc	acc	gtg	ccc	tcc	gcc	atc	tac	cgc	590		
Ala	Trp	Thr	Leu	Ala	Leu	Leu	Leu	Thr	Val	Pro	Ser	Ala	Ile	Tyr	Arg			
			160			165						170						
cgg	ctg	cac	cag	gag	cac	ttc	cca	gcc	cgg	ctg	cag	tgt	gtg	gtg	gac	638		
Arg	Leu	His	Gln	Glu	His	Phe	Pro	Ala	Arg	Leu	Gln	Cys	Val	Val	Asp			
			175			180						185						
tac	ggc	ggc	tcc	tcc	agc	acc	gag	aat	gcg	gtg	act	gcc	atc	cgg	ttt	686		
Tyr	Gly	Gly	Ser	Ser	Ser	Thr	Glu	Asn	Ala	Val	Thr	Ala	Ile	Arg	Phe			
190			195						200			205						
ctt	ttt	ggc	ttc	ctg	ggg	ccc	ctg	gtg	gcc	gtg	gcc	agc	tgc	cac	agt	734		
Leu	Phe	Gly	Phe	Leu	Gly	Pro	Leu	Val	Ala	Val	Ala	Ser	Cys	His	Ser			
			210						215			220						
gcc	ctc	ctg	tgc	tgg	gca	gcc	cga	cgc	tgc	cgg	ccg	ctg	ggc	aca	gcc	782		
Ala	Leu	Leu	Cys	Trp	Ala	Ala	Arg	Arg	Cys	Arg	Pro	Leu	Gly	Thr	Ala			
			225			230						235						
att	gtg	gtg	ggg	ttt	ttt	gtc	tgc	tgg	gca	ccc	tac	cac	ctg	ctg	ggg	830		
Ile	Val	Val	Gly	Phe	Phe	Val	Cys	Trp	Ala	Pro	Tyr	His	Leu	Leu	Gly			
			240			245						250						
ctg	gtg	ctc	act	gtg	gcg	gcc	ccg	aac	tcc	gca	ctc	ctg	gcc	agg	gcc	878		
Leu	Val	Leu	Thr	Val	Ala	Ala	Pro	Asn	Ser	Ala	Leu	Leu	Ala	Arg	Ala			
			255			260						265						
ctg	cgg	gct	gaa	ccc	ctc	atc	gtg	ggc	ctt	gcc	ctc	gct	cac	agc	tgc	926		
Leu	Arg	Ala	Glu	Pro	Leu	Ile	Val	Gly	Leu	Ala	Leu	Ala	His	Ser	Cys			
270			275			</												

tca ctg cca gct gcc tgt cac tgg gcc ctg agg gag tcc cag ggc cag 1022
 Ser Leu Pro Ala Ala Cys His Trp Ala Leu Arg Glu Ser Gln Gly Gln
 305 310 315

gac gaa agt gtg gac agc aag aaa tcc acc agc cat gac ctg gtc tcg 1070
 Asp Glu Ser Val Asp Ser Lys Lys Ser Thr Ser His Asp Leu Val Ser
 320 325 330

gag atg gag gtg tag gctggagaga cattgtgggt gtgtatcttc ttatctcatt 1125
 Glu Met Glu Val
 335

tcacaagact ggcttcaggc atagctggat ccaggagctc aatgatgtct tcattttatt 1185

ccttccttca ttcaacagat atccatcatg cacttgctat gtgcaaggcc tttttaggca 1245

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Ser Asp Arg Pro Val Asp Cys Leu Asp Gly Ala Cys Leu Ala Ile Asp
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Pro Leu Arg Val Ala Pro Leu Pro Leu Tyr Ala Ala Ile Phe Leu Val
 35 40 45

Gly Val Pro Gly Asn Ala Met Val Ala Trp Val Ala Gly Lys Val Ala
 50 55 60

Arg Arg Arg Val Gly Ala Thr Trp Leu Leu His Leu Ala Val Ala Asp
 65 70 75 80

Leu Leu Cys Cys Leu Ser Leu Pro Ile Leu Ala Val Pro Ile Ala Arg
 85 90 95

Gly Gly His Trp Pro Tyr Gly Ala Val Gly Cys Arg Ala Leu Pro Ser
 100 105 110

Ile Ile Leu Leu Thr Met Tyr Ala Ser Val Leu Leu Leu Ala Ala Leu
 115 120 125

Ser Ala Asp Leu Cys Phe Leu Ala Leu Gly Pro Ala Trp Trp Ser Thr
 130 135 140

Val Gln Arg Ala Cys Gly Val Gln Val Ala Cys Gly Ala Ala Trp Thr
145 150 155 160

Leu Ala Leu Leu Leu Thr Val Pro Ser Ala Ile Tyr Arg Arg Leu His
165 170 175

Gln Glu His Phe Pro Ala Arg Leu Gln Cys Val Val Asp Tyr Gly Gly
180 185 190

Ser Ser Ser Thr Glu Asn Ala Val Thr Ala Ile Arg Phe Leu Phe Gly
195 200 205

Phe Leu Gly Pro Leu Val Ala Val Ala Ser Cys His Ser Ala Leu Leu
210 215 220

Cys Trp Ala Ala Arg Arg Cys Arg Pro Leu Gly Thr Ala Ile Val Val
225 230 235 240

Gly Phe Phe Val Cys Trp Ala Pro Tyr His Leu Leu Gly Leu Val Leu
245 250 255

Thr Val Ala Ala Pro Asn Ser Ala Leu Leu Ala Arg Ala Leu Arg Ala
260 265 270

Glu Pro Leu Ile Val Gly Leu Ala Leu Ala His Ser Cys Leu Asn Pro
275 280 285

Met Leu Phe Leu Tyr Phe Gly Arg Ala Gln Leu Arg Arg Ser Leu Pro
290 295 300

Ala Ala Cys His Trp Ala Leu Arg Glu Ser Gln Gly Gln Asp Glu Ser
305 310 315 320

Val Asp Ser Lys Lys Ser Thr Ser His Asp Leu Val Ser Glu Met Glu
325 330 335

Val

<210> 18
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<213> Homo sapiens

<220>

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<222> (174)..(1175)

<400> 18

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tgttttcttt tgtttgtata tatgtttatt ggtaacaggt gacactggaa gca atg      176
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aac acc aca gtg atg caa ggc ttc aac aga tct gag cgg tgc ccc aga      224
Asn Thr Thr Val Met Gln Gly Phe Asn Arg Ser Glu Arg Cys Pro Arg
                    5                                10                    15

gac act cgg ata gta cag ctg gta ttc cca gcc ctc tac aca gtg gtt      272
Asp Thr Arg Ile Val Gln Leu Val Phe Pro Ala Leu Tyr Thr Val Val
                    20                                25                                30

ttc ttg acc ggc atc ctg ctg aat act ttg gct ctg tgg gtg ttt gtt      320
Phe Leu Thr Gly Ile Leu Leu Asn Thr Leu Ala Leu Trp Val Phe Val
                    35                                40                                45

cac atc ccc agc tcc tcc acc ttc atc atc tac ctc aaa aac act ttg      368
His Ile Pro Ser Ser Ser Thr Phe Ile Ile Tyr Leu Lys Asn Thr Leu
                    50                                55                                60                                65

gtg gcc gac ttg ata atg aca ctc atg ctt cct ttc aaa atc ctc tct      416
Val Ala Asp Leu Ile Met Thr Leu Met Leu Pro Phe Lys Ile Leu Ser
                    70                                75                                80

gac tca cac ctg gca ccc tgg cag ctc aga gct ttt gtg tgt cgt ttt      464
Asp Ser His Leu Ala Pro Trp Gln Leu Arg Ala Phe Val Cys Arg Phe
                    85                                90                                95

tct tcg gtg ata ttt tat gag acc atg tat gtg ggc atc gtg ctg tta      512
Ser Ser Val Ile Phe Tyr Glu Thr Met Tyr Val Gly Ile Val Leu Leu
                    100                                105                                110

ggg ctc ata gcc ttt gac aga ttc ctc aag atc atc aga cct ttg aga      560
Gly Leu Ile Ala Phe Asp Arg Phe Leu Lys Ile Ile Arg Pro Leu Arg
                    115                                120                                125

aat att ttt cta aaa aaa cct gtt ttt gca aaa acg gtc tca atc ttc      608
Asn Ile Phe Leu Lys Lys Pro Val Phe Ala Lys Thr Val Ser Ile Phe
                    130                                135                                140                                145

atc tgg ttc ttt ttg ttc ttc atc tcc ctg cca aat acg atc ttg agc      656
Ile Trp Phe Phe Leu Phe Phe Ile Ser Leu Pro Asn Thr Ile Leu Ser
                    150                                155                                160

aac aag gaa gca aca cca tcg tct gtg aaa aag tgt gct tcc tta aag      704
Asn Lys Glu Ala Thr Pro Ser Ser Val Lys Lys Cys Ala Ser Leu Lys
                    165                                170                                175

ggg cct ctg ggg ctg aaa tgg cat caa atg gta aat aac ata tgc cag      752
Gly Pro Leu Gly Leu Lys Trp His Gln Met Val Asn Asn Ile Cys Gln
                    180                                185                                190

ttt att ttc tgg act gtt ttt atc cta atg ctt gtg ttt tat gtg gtt      800

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<211> 333
<212> PRT
<213> Homo sapiens

<400> 19

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Val Phe Leu Thr Gly Ile Leu Leu Asn Thr Leu Ala Leu Trp Val Phe
35 40 45

Val His Ile Pro Ser Ser Ser Thr Phe Ile Ile Tyr Leu Lys Asn Thr
50 55 60

Leu Val Ala Asp Leu Ile Met Thr Leu Met Leu Pro Phe Lys Ile Leu
65 70 75 80

Ser Asp Ser His Leu Ala Pro Trp Gln Leu Arg Ala Phe Val Cys Arg
85 90 95

v

Phe Ser Ser Val Ile Phe Tyr Glu Thr Met Tyr Val Gly Ile Val Leu
 100 105 110

Leu Gly Leu Ile Ala Phe Asp Arg Phe Leu Lys Ile Ile Arg Pro Leu
 115 120 125

Arg Asn Ile Phe Leu Lys Lys Pro Val Phe Ala Lys Thr Val Ser Ile
 130 135 140

Phe Ile Trp Phe Phe Leu Phe Phe Ile Ser Leu Pro Asn Thr Ile Leu
 145 150 155 160

Ser Asn Lys Glu Ala Thr Pro Ser Ser Val Lys Lys Cys Ala Ser Leu
 165 170 175

Lys Gly Pro Leu Gly Leu Lys Trp His Gln Met Val Asn Asn Ile Cys
 180 185 190

Gln Phe Ile Phe Trp Thr Val Phe Ile Leu Met Leu Val Phe Tyr Val
 195 200 205

Val Ile Ala Lys Lys Val Tyr Asp Ser Tyr Arg Lys Ser Lys Ser Lys
 210 215 220

Asp Arg Lys Asn Asn Lys Lys Leu Glu Gly Lys Val Phe Val Val Val
 225 230 235 240

Ala Val Phe Phe Val Cys Phe Ala Pro Phe His Phe Ala Arg Val Pro
 245 250 255

Tyr Thr His Ser Gln Thr Asn Asn Lys Thr Asp Cys Arg Leu Gln Asn
 260 265 270

Gln Leu Phe Ile Ala Lys Glu Thr Thr Leu Phe Leu Ala Ala Thr Asn
 275 280 285

Ile Cys Met Asp Pro Leu Ile Tyr Ile Phe Leu Cys Lys Lys Phe Thr
 290 295 300

Glu Lys Leu Pro Cys Met Gln Gly Arg Lys Thr Thr Ala Ser Ser Gln
 305 310 315 320

Glu Asn His Ser Ser Gln Thr Asp Asn Ile Thr Leu Gly
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<213> Homo sapiens

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tgttttaa aat ccggattggc atttttcttt aataataata catacaaaaa ctgagagggt 420
taataaaagaa ataattcaaa gtcctaataa gtcaacaaac agatttcatt ataagctgga 480
acataaaaaga gacaccatgg ttggctgtct cttttcaaaa attatcacgg ccacttggtc 540
aaacgggaag cagcattcag aacaatggtt ctcaaactc ggggtggcat aaacaccatg 600
caggttggtt accacacaga ttcttgggcc tggtcccagt ctgaagctct cataaaggat 660
ctgaggaatc tgcttcgtga caagattcag actatttatt tatttatcac ccaagctgga 720
gtgcaggggt gcaaccgggt caggaaacct cgctcggag taaaaggga accaaatcgg 780
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tgccaaagcc tgaagcctcc aagccataaa caacccca atg gcc tcc cac gaa gtt 116
Met Ala Ser His Glu Val
1 5
gat aat gca gag ctg ggg tca gcc tct gcc cat ggt acc cca ggc agt 164
Asp Asn Ala Glu Leu Gly Ser Ala Ser Ala His Gly Thr Pro Gly Ser
10 15 20
gag acg gga cca gaa gag ctg aat act tct gtc tac cac ccc ata aat 212
Glu Thr Gly Pro Glu Glu Leu Asn Thr Ser Val Tyr His Pro Ile Asn
25 30 35

gga tca cca gat tat cag aaa gca aaa tta caa gtt ctt ggg gcc atc Gly Ser Pro Asp Tyr Gln Lys Ala Lys Leu Gln Val Leu Gly Ala Ile 40 45 50	260
cag atc ctg aat gca gca atg att ctg gct ttg ggt gtc ttt ctg ggt Gln Ile Leu Asn Ala Ala Met Ile Leu Ala Leu Gly Val Phe Leu Gly 55 60 65 70	308
tcc ttg caa tac cca tac cac ttc caa aag cac ttc ttt ttc ttc acc Ser Leu Gln Tyr Pro Tyr His Phe Gln Lys His Phe Phe Phe Phe Thr 75 80 85	356
ttc tac aca ggc tac ccg att tgg ggt gct gtg ttt ttc tgt agt tca Phe Tyr Thr Gly Tyr Pro Ile Trp Gly Ala Val Phe Phe Cys Ser Ser 90 95 100	404
gga acc ttg tct gtt gta gca ggg ata aaa ccc aca aga aca tgg ata Gly Thr Leu Ser Val Val Ala Gly Ile Lys Pro Thr Arg Thr Trp Ile 105 110 115	452
cag aac agt ttt gga atg aac att gcc agt gct aca att gca cta gtg Gln Asn Ser Phe Gly Met Asn Ile Ala Ser Ala Thr Ile Ala Leu Val 120 125 130	500
ggg act gct ttt ctc tca cta aat ata gca gtt aat atc cag tca tta Gly Thr Ala Phe Leu Ser Leu Asn Ile Ala Val Asn Ile Gln Ser Leu 135 140 145 150	548
agg agt tgt cac tct tca tca gag tca ccg gac cta tgc aat tac atg Arg Ser Cys His Ser Ser Ser Glu Ser Pro Asp Leu Cys Asn Tyr Met 155 160 165	596
ggc tcc ata tca aat ggc atg gtg tct cta ctg ctg att ctc acc ttg Gly Ser Ile Ser Asn Gly Met Val Ser Leu Leu Leu Ile Leu Thr Leu 170 175 180	644
ctg gaa tta tgc gta act atc tct acc ata gcc atg tgg tgc aat gca Leu Glu Leu Cys Val Thr Ile Ser Thr Ile Ala Met Trp Cys Asn Ala 185 190 195	692
aac tgc tgt aat tca aga gag gaa att tcc tca cct ccc aat tct gtg Asn Cys Cys Asn Ser Arg Glu Glu Ile Ser Ser Pro Pro Asn Ser Val 200 205 210	740
taa tcaagaatac ctcccttatga aaataattct gagagcatga atatttgacc	793
ttaaatctcc agtgactcag agcttcaccc acaaactcag gagaacataa gcctgctcgt	853
aaagctcaat ccttctatca tggcaccaat cacaagaacc ttggacgttt gactgactct	913
atcctttctc tcctaactat aaatcctatt tgtgtgtcgt gggatatggaa ggacagatat	973
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cagaaattgg ttctattttct tcttatccac ctactccatt gctttatgag gtttaaggaa	1093
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<212> PRT
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<400> 22

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Val Tyr His Pro Ile Asn Gly Ser Pro Asp Tyr Gln Lys Ala Lys Leu
35 40 45

Gln Val Leu Gly Ala Ile Gln Ile Leu Asn Ala Ala Met Ile Leu Ala
50 55 60

Leu Gly Val Phe Leu Gly Ser Leu Gln Tyr Pro Tyr His Phe Gln Lys
65 70 75 80

His Phe Phe Phe Phe Thr Phe Tyr Thr Gly Tyr Pro Ile Trp Gly Ala
85 90 95

Val Phe Phe Cys Ser Ser Gly Thr Leu Ser Val Val Ala Gly Ile Lys
100 105 110

Pro Thr Arg Thr Trp Ile Gln Asn Ser Phe Gly Met Asn Ile Ala Ser
115 120 125

Ala Thr Ile Ala Leu Val Gly Thr Ala Phe Leu Ser Leu Asn Ile Ala
130 135 140

Val Asn Ile Gln Ser Leu Arg Ser Cys His Ser Ser Ser Glu Ser Pro

145		150		155		160									
Asp	Leu	Cys	Asn	Tyr	Met	Gly	Ser	Ile	Ser	Asn	Gly	Met	Val	Ser	Leu
			165						170					175	
Leu	Leu	Ile	Leu	Thr	Leu	Leu	Glu	Leu	Cys	Val	Thr	Ile	Ser	Thr	Ile
			180					185					190		
Ala	Met	Trp	Cys	Asn	Ala	Asn	Cys	Cys	Asn	Ser	Arg	Glu	Glu	Ile	Ser
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gcacggcaga gagtctggtg ggggtggaggg gctggcctgg cccctctgtc ctgtggaa	178
atg ctg ggg caa gtg gtc acc ctc ata ctc ctc ctg ctc ctc aag gtg	226
Met Leu Gly Gln Val Val Thr Leu Ile Leu Leu Leu Leu Lys Val	
1 5 10 15	
tat cag ggc aaa gga tgc cag gga tca gct gac cat gtg gtt agc atc	274
Tyr Gln Gly Lys Gly Cys Gln Gly Ser Ala Asp His Val Val Ser Ile	
20 25 30	
tcg gga gtg cct ctt cag tta caa cca aac agc ata cag acg aag gtt	322
Ser Gly Val Pro Leu Gln Leu Gln Pro Asn Ser Ile Gln Thr Lys Val	
35 40 45	
gac agc att gca tgg aag aag ttg ctg ccc tca caa aat gga ttt cat	370
Asp Ser Ile Ala Trp Lys Lys Leu Leu Pro Ser Gln Asn Gly Phe His	
50 55 60	
cac ata ttg aag tgg gag aat ggc tct ttg cct tcc aat act tcc aat	418
His Ile Leu Lys Trp Glu Asn Gly Ser Leu Pro Ser Asn Thr Ser Asn	
65 70 75 80	
gat aga ttc agt ttt ata gtc aag aac ttg agt ctt ctc atc aag gca	466
Asp Arg Phe Ser Phe Ile Val Lys Asn Leu Ser Leu Leu Ile Lys Ala	
85 90 95	
gct cag cag cag gac agt ggc ctc tac tgc ctg gag gtc acc agt ata	514

Ala	Gln	Gln	Gln	Asp	Ser	Gly	Leu	Tyr	Cys	Leu	Glu	Val	Thr	Ser	Ile	
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Ser	Gly	Lys	Val	Gln	Thr	Ala	Thr	Phe	Gln	Val	Phe	Val	Phe	Asp	Lys	
		115					120					125				
gtt	gag	aaa	ccc	cgc	cta	cag	ggg	cag	ggg	aag	atc	ctg	gac	aga	ggg	610
Val	Glu	Lys	Pro	Arg	Leu	Gln	Gly	Gln	Gly	Lys	Ile	Leu	Asp	Arg	Gly	
	130					135					140					
aga	tgc	caa	gtg	gct	ctg	tct	tgc	ttg	gtc	tcc	agg	gat	ggc	aat	gtg	658
Arg	Cys	Gln	Val	Ala	Leu	Ser	Cys	Leu	Val	Ser	Arg	Asp	Gly	Asn	Val	
145					150					155					160	
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Ser	Tyr	Ala	Trp	Tyr	Arg	Gly	Ser	Lys	Leu	Ile	Gln	Thr	Ala	Gly	Asn	
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ctc	acc	tac	ctg	gac	gag	gag	gtt	gac	att	aat	ggc	act	cac	aca	tat	754
Leu	Thr	Tyr	Leu	Asp	Glu	Glu	Val	Asp	Ile	Asn	Gly	Thr	His	Thr	Tyr	
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acc	tgc	aat	gtc	agc	aat	cct	gtt	agc	tgg	gaa	agc	cac	acc	ctg	aat	802
Thr	Cys	Asn	Val	Ser	Asn	Pro	Val	Ser	Trp	Glu	Ser	His	Thr	Leu	Asn	
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ctc	act	cag	gac	tgt	cag	aat	gcc	cat	cag	gaa	ttc	aga	ttt	tgg	cag	850
Leu	Thr	Gln	Asp	Cys	Gln	Asn	Ala	His	Gln	Glu	Phe	Arg	Phe	Trp	Pro	
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Phe	Leu	Val	Ile	Ile	Val	Ile	Leu	Ser	Ala	Leu	Phe	Leu	Gly	Thr	Leu	
225					230					235					240	
gcc	tgc	ttc	tgt	gtg	tgg	agg	aga	aag	agg	aag	gag	aag	cag	tca	gag	946
Ala	Cys	Phe	Cys	Val	Trp	Arg	Arg	Lys	Arg	Lys	Glu	Lys	Gln	Ser	Glu	
				245					250					255		
acc	agt	ccc	aag	gaa	ttt	ttg	aca	att	tac	gaa	gat	gtc	aag	gat	ctg	994
Thr	Ser	Pro	Lys	Glu	Phe	Leu	Thr	Ile	Tyr	Glu	Asp	Val	Lys	Asp	Leu	
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aaa	acc	agg	aga	aat	cac	gag	cag	gag	cag	act	ttt	cct	gga	ggg	ggg	1042
Lys	Thr	Arg	Arg	Asn	His	Glu	Gln	Glu	Gln	Thr	Phe	Pro	Gly	Gly	Gly	
		275					280					285				
agc	acc	atc	tac	tct	atg	atc	cag	tcc	cag	tct	tct	gct	ccc	acg	tca	1090
Ser	Thr	Ile	Tyr	Ser	Met	Ile	Gln	Ser	Gln	Ser	Ser	Ala	Pro	Thr	Ser	
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caa	gaa	cct	gca	tat	aca	tta	tat	tca	tta	att	cag	cct	tcc	agg	aag	1138
Gln	Glu	Pro	Ala	Tyr	Thr	Leu	Tyr	Ser	Leu	Ile	Gln	Pro	Ser	Arg	Lys	
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Ser	Gly	Ser	Arg	Lys	Arg	Asn	His	Ser	Pro	Ser	Phe	Asn	Ser	Thr	Ile	
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Tyr	Glu	Val	Ile	Gly	Lys	Ser	Gln	Pro	Lys	Ala	Gln	Asn	Pro	Ala	Arg	

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aaaaa			2481

<210> 24
 <211> 365
 <212> PRT
 <213> Homo sapiens

<400> 24

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[illegible]

Lys Thr Arg Arg Asn His Glu Gln Glu Gln Thr Phe Pro Gly Gly Gly
275 280 285

Ser Thr Ile Tyr Ser Met Ile Gln Ser Gln Ser Ser Ala Pro Thr Ser
290 295 300

Gln Glu Pro Ala Tyr Thr Leu Tyr Ser Leu Ile Gln Pro Ser Arg Lys
305 310 315 320

Ser Gly Ser Arg Lys Arg Asn His Ser Pro Ser Phe Asn Ser Thr Ile
325 330 335

Tyr Glu Val Ile Gly Lys Ser Gln Pro Lys Ala Gln Asn Pro Ala Arg
340 345 350

Leu Ser Arg Lys Glu Leu Glu Asn Phe Asp Val Tyr Ser
355 360 365

<210> 25
<211> 4574
<212> DNA
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<220>
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<222> (593) .. (3061)

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attaacgtcc acatggagat atggaagagg accggggatt ggtaccgtaa cc atg gtc 598
Met Val
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agc tgg ggt cgt ttc atc tgc ctg gtc gtg gtc acc atg gca acc ttg 646
Ser Trp Gly Arg Phe Ile Cys Leu Val Val Val Thr Met Ala Thr Leu

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cca gaa gag cca cca acc aaa tac caa atc tct caa cca gaa gtg tac Pro Glu Glu Pro Pro Thr Lys Tyr Gln Ile Ser Gln Pro Glu Val Tyr 35 40 45 50			742
gtg gct gcg cca ggg gag tcg cta gag gtg cgc tgc ctg ttg aaa gat Val Ala Ala Pro Gly Glu Ser Leu Glu Val Arg Cys Leu Leu Lys Asp 55 60 65			790
gcc gcc gtg atc agt tgg act aag gat ggg gtg cac ttg ggg ccc aac Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val His Leu Gly Pro Asn 70 75 80			838
aat agg aca gtg ctt att ggg gag tac ttg cag ata aag ggc gcc acg Asn Arg Thr Val Leu Ile Gly Glu Tyr Leu Gln Ile Lys Gly Ala Thr 85 90 95			886
cct aga gac tcc ggc ctc tat gct tgt act gcc agt agg act gta gac Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala Ser Arg Thr Val Asp 100 105 110			934
agt gaa act tgg tac ttc atg gtg aat gtc aca gat gcc atc tca tcc Ser Glu Thr Trp Tyr Phe Met Val Asn Val Thr Asp Ala Ile Ser Ser 115 120 125 130			982
gga gat gat gag gat gac acc gat ggt gcg gaa gat ttt gtc agt gag Gly Asp Asp Glu Asp Asp Thr Asp Gly Ala Glu Asp Phe Val Ser Glu 135 140 145			1030
aac agt aac aac aag aga gca cca tac tgg acc aac aca gaa aag atg Asn Ser Asn Asn Lys Arg Ala Pro Tyr Trp Thr Asn Thr Glu Lys Met 150 155 160			1078
gaa aag cgg ctc cat gct gtg cct gcg gcc aac act gtc aag ttt cgc Glu Lys Arg Leu His Ala Val Pro Ala Ala Asn Thr Val Lys Phe Arg 165 170 175			1126
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ggg aag gag ttt aag cag gag cat cgc att gga ggc tac aag gta cga Gly Lys Glu Phe Lys Gln Glu His Arg Ile Gly Gly Tyr Lys Val Arg 195 200 205 210			1222
aac cag cac tgg agc ctc att atg gaa agt gtg gtc cca tct gac aag Asn Gln His Trp Ser Leu Ile Met Glu Ser Val Val Pro Ser Asp Lys 215 220 225			1270
gga aat tat acc tgt gtg gtg gag aat gaa tac ggg tcc atc aat cac Gly Asn Tyr Thr Cys Val Val Glu Asn Glu Tyr Gly Ser Ile Asn His 230 235 240			1318
acg tac cac ctg gat gtt gtg gag cga tcg cct cac cgg ccc atc ctc Thr Tyr His Leu Asp Val Val Glu Arg Ser Pro His Arg Pro Ile Leu 245 250 255			1366

caa gcc gga ctg ccg gca aat gcc tcc aca gtg gtc gga gga gac gta Gln Ala Gly Leu Pro Ala Asn Ala Ser Thr Val Val Gly Gly Asp Val 260 265 270	1414
gag ttt gtc tgc aag gtt tac agt gat gcc cag ccc cac atc cag tgg Glu Phe Val Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp 275 280 285 290	1462
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ccc tac ctc aag gtt ctc aag cac tcg ggg ata aat agt tcc aat gca Pro Tyr Leu Lys Val Leu Lys His Ser Gly Ile Asn Ser Ser Asn Ala 310 315 320	1558
gaa gtg ctg gct ctg ttc aat gtg acc gag gcg gat gct ggg gaa tat Glu Val Leu Ala Leu Phe Asn Val Thr Glu Ala Asp Ala Gly Glu Tyr 325 330 335	1606
ata tgt aag gtc tcc aat tat ata ggg cag gcc aac cag tct gcc tgg Ile Cys Lys Val Ser Asn Tyr Ile Gly Gln Ala Asn Gln Ser Ala Trp 340 345 350	1654
ctc act gtc ctg cca aaa cag caa gcg cct gga aga gaa aag gag att Leu Thr Val Leu Pro Lys Gln Gln Ala Pro Gly Arg Glu Lys Glu Ile 355 360 365 370	1702
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ctg acc aaa cgt atc ccc ctg cgg aga cag gta aca gtt tcg gct gag Leu Thr Lys Arg Ile Pro Leu Arg Arg Gln Val Thr Val Ser Ala Glu 420 425 430	1894
tcc agc tcc tcc atg aac tcc aac acc ccg ctg gtg agg ata aca aca Ser Ser Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile Thr Thr 435 440 445 450	1942
cgc ctc tct tca acg gca gac acc ccc atg ctg gca ggg gtc tcc gag Arg Leu Ser Ser Thr Ala Asp Thr Pro Met Leu Ala Gly Val Ser Glu 455 460 465	1990
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aca ctg ggc aag ccc ctg gga gaa ggt tgc ttt ggg caa gtg gtc atg Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val Val Met 485 490 495	2086

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gcc cgg agg cca ccc ggg atg gag tac tcc tat gac att aac cgt gtt Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser Tyr Asp Ile Asn Arg Val 580 585 590	2374
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ctg gcc aga ggc atg gag tac ttg gct tcc caa aaa tgt att cat cga Leu Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile His Arg 615 620 625	2470
gat tta gca gcc aga aat gtt ttg gta aca gaa aac aat gtg atg aaa Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asn Asn Val Met Lys 630 635 640	2518
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Lys Asp Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val His Leu Gly
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Ala Thr Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala Ser Arg Thr
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Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly
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His Arg Met Asp Lys Pro Ala Asn Cys Thr Asn Glu Leu Tyr Met Met
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Met Arg Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys
740 745 750

Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Leu Thr Thr Asn Glu
755 760 765

Glu Tyr Leu Asp Leu Ser Gln Pro Leu Glu Gln Tyr Ser Pro Ser Tyr
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<211> 860
<212> PRT

<213> Homo sapiens

<400> 28

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Val	Asp	Trp	Ile	His	Ser	Asn	Ile	Tyr	Trp	Thr	Asp	Ser	Val	Leu	Gly
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Leu	Leu	Ala	Glu	Asn	Leu	Leu	Ser	Pro	Glu	Asp	Met	Val	Leu	Phe	His
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740 745 750

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755 760 765

His Gln Ala Leu Gly Asp Val Ala Gly Arg Gly Asn Glu Lys Lys Pro
770 775 780

Ser Ser Val Arg Ala Leu Ser Ile Val Leu Pro Ile Val Leu Leu Val
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Phe Leu Cys Leu Gly Val Phe Leu Leu Trp Lys Asn Trp Arg Leu Lys
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Asn Ile Asn Ser Ile Asn Phe Asp Asn Pro Val Tyr Gln Lys Thr Thr
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<212> DNA
<213> Homo sapiens

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tgtttgctta ttccaaaaaa aaaaaaaaaa 2070
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<212> DNA
<213> Homo sapiens

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<222> (88)..(1488)

<400> 30

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Met Thr Pro Ile Leu Thr Val Leu Ile	
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tgt ctc ggg ctg agt ctg ggc ccc agg acc cac gtg cag gca ggg cac	162
Cys Leu Gly Leu Ser Leu Gly Pro Arg Thr His Val Gln Ala Gly His	
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ctc ccc aag ccc acc ctc tgg gct gag cca ggc tct gtg atc atc cag	210
Leu Pro Lys Pro Thr Leu Trp Ala Glu Pro Gly Ser Val Ile Ile Gln	
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gga agt cct gtg acc ctc agg tgt cag ggg agc ctt cag gct gag gag	258
Gly Ser Pro Val Thr Leu Arg Cys Gln Gly Ser Leu Gln Ala Glu Glu	
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Tyr His Leu Tyr Arg Glu Asn Lys Ser Ala Ser Trp Val Arg Arg Ile	
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caa gag cct ggg aag aat ggc cag ttc ccc atc cca tcc atc acc tgg	354
Gln Glu Pro Gly Lys Asn Gly Gln Phe Pro Ile Pro Ser Ile Thr Trp	
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gaa cac gca ggg cgg tat cac tgt cag tac tac agc cac aat cac tca	402
Glu His Ala Gly Arg Tyr His Cys Gln Tyr Tyr Ser His Asn His Ser	
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tca gag tac agt gac ccc ctg gag ctg gtg gtg aca gga gcc tac agc	450
Ser Glu Tyr Ser Asp Pro Leu Glu Leu Val Val Thr Gly Ala Tyr Ser	
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Lys Pro Thr Leu Ser Ala Leu Pro Ser Pro Val Val Thr Leu Gly Gly	
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Asn Val Thr Leu Gln Cys Val Ser Gln Val Ala Phe Asp Gly Phe Ile	
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ctg tgt aag gaa gga gaa gat gaa cac cca caa cgc ctg aac tcc cat	594
Leu Cys Lys Glu Gly Glu Asp Glu His Pro Gln Arg Leu Asn Ser His	
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Ser His Ala Arg Gly Trp Ser Trp Ala Ile Phe Ser Val Gly Pro Val	
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Ser Pro Tyr Val Trp Ser Leu Pro Ser Asp Leu Leu Glu Leu Leu Val	
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Arg Ser Leu Gln Asp Ala Ala Gly Arg
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<212> PRT
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<400> 31

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35 40 45

Cys Gln Gly Ser Leu Gln Ala Glu Glu Tyr His Leu Tyr Arg Glu Asn
50 55 60

Lys Ser Ala Ser Trp Val Arg Arg Ile Gln Glu Pro Gly Lys Asn Gly
65 70 75 80

Gln Phe Pro Ile Pro Ser Ile Thr Trp Glu His Ala Gly Arg Tyr His
85 90 95

Cys Gln Tyr Tyr Ser His Asn His Ser Ser Glu Tyr Ser Asp Pro Leu
100 105 110

Glu Leu Val Val Thr Gly Ala Tyr Ser Lys Pro Thr Leu Ser Ala Leu
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Pro Ser Pro Val Val Thr Leu Gly Gly Asn Val Thr Leu Gln Cys Val
130 135 140

Ser Gln Val Ala Phe Asp Gly Phe Ile Leu Cys Lys Glu Gly Glu Asp
145 150 155 160

Glu His Pro Gln Arg Leu Asn Ser His Ser His Ala Arg Gly Trp Ser
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Trp Ala Ile Phe Ser Val Gly Pro Val Ser Pro Ser Arg Arg Trp Ser
180 185 190

Tyr Arg Cys Tyr Ala Tyr Asp Ser Asn Ser Pro Tyr Val Trp Ser Leu
195 200 205

Pro Ser Asp Leu Leu Glu Leu Val Pro Gly Val Ser Lys Lys Pro
210 215 220

Ser Leu Ser Val Gln Pro Gly Pro Met Val Ala Pro Gly Glu Ser Leu
225 230 235 240

Thr Leu Gln Cys Val Ser Asp Val Gly Tyr Asp Arg Phe Val Leu Tyr
245 250 255

Lys Glu Gly Glu Arg Asp Phe Leu Gln Arg Pro Gly Trp Gln Pro Gln
260 265 270

Ala Gly Leu Ser Gln Ala Asn Phe Thr Leu Gly Pro Val Ser Pro Ser
275 280 285

His Gly Gly Gln Tyr Arg Cys Tyr Ser Ala His Asn Leu Ser Ser Glu
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Trp Ser Ala Pro Ser Asp Pro Leu Asp Ile Leu Ile Thr Gly Gln Phe
305 310 315 320

Tyr Asp Arg Pro Ser Leu Ser Val Gln Pro Val Pro Thr Val Ala Pro
325 330 335

Gly Lys Asn Val Thr Leu Leu Cys Gln Ser Arg Gly Gln Phe His Thr
340 345 350

Phe Leu Leu Thr Lys Glu Gly Ala Gly His Pro Pro Leu His Leu Arg
355 360 365

Ser Glu His Gln Ala Gln Gln Asn Gln Ala Glu Phe Arg Met Gly Pro
370 375 380

Val Thr Ser Ala His Val Gly Thr Tyr Arg Cys Tyr Ser Ser Leu Ser
385 390 395 400

Ser Asn Pro Tyr Leu Leu Ser Leu Pro Ser Asp Pro Leu Glu Leu Val
405 410 415

Val Ser Ala Ser Leu Gly Gln His Pro Gln Asp Tyr Thr Val Glu Asn
420 425 430

Leu Ile Arg Met Gly Val Ala Gly Leu Val Leu Val Val Leu Gly Ile
435 440 445

Leu Leu Phe Glu Ala Gln His Ser Gln Arg Ser Leu Gln Asp Ala Ala
450 455 460

Gly Arg
465